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TECHNICAL SERVICES

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FOURTH

ANNUAL REPORT

For the Fiscal Year
Ending
June 30, 1969

Submitted to
Office of State Technical Services
Department of Commerce

Bureau of Business and Economic Research
University of Montana
Missoula, Montana 59801

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SUMMARY

Fiscal year 1969 was a year of frustration! Its dawn brought the predictable bustle of activity in planning and programs, which by midyear were enveloped in uncertainty and suspicion. The failure to seek a federal 1970 appropriation not only dampened the zeal of the project directors and administrators but also reduced the velocity of the program in toto. Despite this uncertainty and setback the MTS, with the able assistance of its Advisory Council and its project directors, admirably executed its undertakings. Programs were evaluated and reoriented to carry the program during the darker days. With the approval of the OSTS, the designated agency canceled one and suspended two programs, substituted three new projects, reallocated funds within approved program elements to extend the life of certain projects, and extended the terminal dates on some of its educational and field service programs. The following is the status of the programs as of June 30, 1969:

Suspended

F9MC3 Directory of Montana Scientists and Engineers
F9SC3 Industrial and Management Engineering Services

Substituted

F9TC2 Mining and Fuel Methods
F9SN2 Roads and Streets Conference
F8MN1 Wood Waste Workshop

Completed

F8MN2 Computer Technology Seminars
F8MN3 Forest Ecology Workshop
F9SN1 Scientific and Engineering Computer Applications

Continuing

F9MC1 Timber Industry Field Service
F9TC1 Mining and Geology Field Service

Implemented and to be completed during FY70

F7MN4 Technical Resource Inventory
F8MN5 Feed-Lot Operators Workshop
F8MN6 Wood Waste Disposal Workshop
F9SC1 Civil Engineering and Engineering Mechanics Seminars
F9SC2 Water and Waste Treatment Workshop
F9MC2 Management Technology Seminars
F9SC4 Engineering Research and Development Report

Institutions participating in the program during Fiscal 1969 were the University of Montana, Montana State University, Montana College of Mineral Science and Technology, and Eastern Montana College. The following summarizes the activities of each institution.

University of Montana:

The new TIMBER INDUSTRY FIELD SERVICE program initiated in October 1969 experienced a substantial growth during the last fiscal year. On-the-spot advice augmented by reference, referral, and searching services was provided to over 30 firms serving the forest products industry in Montana. In addition, articles and technical reports concerning modern innovations in the field were offered to the industry via a quarterly newsletter, "Forest Industry News." Over 2,500 copies of each

issue were distributed. The first of a series of MANAGEMENT TECHNOLOGY SEMINARS was organized to offer practical information to service station operators and managers. Faculty members and experts in the field gave solutions to problems in the areas of inventory control, accounting, credit and collections, and advertising. The attendees lauded the workshop for offering truly meaningful assistance and taking initial positive steps to relieve some of the problems of small businesses.

Based upon the success of the Silviculture Workshop held during fiscal 1968, a FOREST ECOLOGY WORKSHOP was held at the Lubrecht Experimental Forest. Participants, through discussions and field trips, were taught the use of indicator plants as tools for measuring the forest environment. Topics such as photo-edaphics and plant distribution, ecology of ponderosa pine, douglas fir and spruce fir, anatomical and morphological adaptations were discussed.

Montana State University:

WATER AND WASTE TREATMENT WORKSHOP had an impressive record of accomplishments in the last fiscal year, drawing over 115 participants--the largest number ever to attend such a workshop. Many pertinent topics including anerobic

digestion, self purification, activated sludge operation, and filteration were discussed in the five-day program with emphasis on practical applications. The Department of Civil Engineering and Engineering Mechanics held a total of 11 seminars under their CIVIL ENGINEERING AND ENGINEERING MECHANICS SEMINARS program. Six experts from various phases of civil engineering discussed recent developments and practical solutions to problems in their respective areas of expertise with approximately 230 professional engineers and interested persons. Activities of SCIENTIFIC AND ENGINEERING COMPUTER APPLICATIONS were directed at Montana's engineering firms to help them understand, program, and solve problems with the aid of computers. Throughout the fiscal year the project directors held a number of sessions and demonstrations in five large cities. Evaluation indicates that these firms are now in a better position to understand the significant impact of computers in their field and will eventually utilize the remote terminal operation to their advantage.

As a result of CHEMICAL PROCESSING FIELD SERVICE over 30 small industrial firms were offered technical information, and on-the-spot counseling by the Center for Industrial and Management Engineering Services, an arm of the Department of Industrial and Management Engineering. Efforts were continued to further expand and promote the Center which will establish a broad base for providing much needed

technical expertise to the Montana manufacturing industry. Montana State University also published six newsletters entitled ENGINEERING RESEARCH AND DEVELOPMENT REPORT describing important projects, and technical information and results of research. Approximately 3,000 copies of each issue were circulated to interested persons.

Montana College of Mineral Science and Technology:

During this reporting period, a total of 80 personal contracts were made with small mining operators through this institution's continuing program, MINING AND GEOLOGY FIELD SERVICE. Also 17 mine visits are pending as a result of recent requests. Because of its exceptional quality, the field service engendered an educational program, "Geochemical Prospecting Seminar" and a publication, "Directory of Mining Enterprises for 1968." Although no MTS funds were expended, these projects were a direct result of the field service activity and much information gathered during the field visits was utilized in both projects.

Eastern Montana College:

Groundwork for WORKSHOP FOR FEED-LOT OPERATORS was completed during Fiscal 1969. All pertinent information and technical data has been compiled for a publication which will be distributed to the attendees of the workshop. The workshop is scheduled for November 1969.

PROGRAM PROGRESS

Administration and Planning

The designated agency for Montana, the University of Montana's Bureau of Business and Economic Research is responsible for the administration of the Montana Technical Services program. Personnel of the MTS include Dr. Patricia P. Douglas, Director, and Rauf A. Khan, Assistant Director, with secretarial and clerical assistance. The responsibilities of the Office of the MTS include overall planning, administration and implementation of all MTS programs.

Specifically, the responsibilities of the Office of Montana Technical Services include: (a) counseling the participating institutions in development and submission of proposals; (b) coordinating all projects conducted by its participating instutions; (c) cooperating with federal and state agencies in their technology transfer programs; (d) budgeting and accounting of all projects; (e) evaluating all projects in terms of the overall objectives of the annual and five-year plan; and (f) preparation of annual state plan and report.

Without being capricious, it should be pointed out that the administrative philosophy of the MTS since its inception has been based upon dedication. To ensure a maximum level of federal funds for approved programs and to apply MTS funds as seed money for potential worthy projects, the administrative

expenses were held to a minimum. The Director contributed her time, while the Assistant Director and one secretary were employed on a part-time basis. However, when the federal funding is reinstated, the program should burgeon with activities requiring additional personnel to cope with greater administrative and planning responsibilities.

Although no major administrative problems were experienced, the relative job insecurity coupled with lack of Fiscal 1970 funding precipitated a loss of two key project directors and also created some hardships for project directors who were dependent upon the funding to complete the next phases of their projects.

Because of the austere system of administration employed by the MTS, lack of 1970 funding will not create major difficulties for the administrative phase of the program. In view of the fact that the administrative expenditures are funded through June 30, 1970, Montana declined the administrative support offered by the OSTS pending action on 1970 appropriations.

During Fiscal 1969, Montana expended $9,769.00 of the remaining $20,000 1968 planning grant.

Planning activities undertaken throughout the fiscal year were primarily based on: (a) feed-back received from field service activities; (b) needs and interests ascertained by field representatives through personal interviews; and (c) evaluation questionnaires received from the participants;

(d) planning studies used for analysis and isolation of a specific problem area. Efforts to develop a balanced combination of field service activities and educational programs were emphasized. Educational programs developed through feedback received from field services were given priority so that specific probelms which demand more than on-the-spot counseling may be better solved through seminars and workshops. Thus, the programs were designed not only for the purpose of immediate technology transfer, but also to educate the potential users in the effective use of future technological advances.

Planning funds were utilized by the Department of Civil Engineering and Engineering Mechanics at Montana State University in analyzing the problems and developing a program in the area of scientific and engineering computer applications. The study evinced the necessity for such a program which was funded in Fiscal 1969. This educational-cum-demonstration program has made considerable progress towards dissemination of much needed information on computer applications.

To situate the MTS on a sounder financial ground and to obtain matching funds from the State Legislature, the Office of MTS spent considerable time and effort to gain a state appropriation. Although the toils did not bear fruit, they did offer the program publicity and provided it with numerous friends, who will be influential in obtaining an appropriation during the next legislative session.

Regional Planning

This has been a constructive year for the Rocky Mountain Technical Services Council, the regional planning arm for the eight Rocky Mountain States. Under the direction of Robert Shriner, Wyoming's State Technical Services Director, one major planning activity was completed, and another started and nearly completed; in addition, the Council served as a working committee for Gene Hansen, Utah's Director, who lent his support and knowledge to the National Task Force.

Through cooperative planning and joint funding, the Rocky Mountain Technical Services Council authorized the John D. Kettelle Corporation to prepare a plan for the development of training programs on technology transfer. Part of this plan includes the selection of a target industry for cooperative work in the eight Rocky Mountain States. The target industry selected was the construction industry.

To complement this broader effort, the Council authorized the Technology Application Center in New Mexico to prepare a Directory of Information Sources for Construction Technology. The Directory will be completed by September, 1969.

National legislative work occupied the remaining time of the Council; in addition to the more tangible results noted

above, it was very apparent, in Montana at least, that effective organization and utilization of well-established regional ties was a major advantage in our legislative efforts.

As of July 1, 1969 Montana's STS Director assumed the chairmanship of the Rocky Mountain Technical Services Council.

ADVISORY COUNCIL

Because of its pragmatic approach to problem solving the twelve (12) member Advisory Council has contributed considerably to the growth of the Montana Technical Services. Appointed by the Governor, these individuals represent various business and industry groups including mining, engineering, retail trade, insurance and banking.

There has been no change in the membership during Fiscal 1969; however, Mr. Leland K. Walker resigned the chairmanship of the Council due to other commitments and Mr. Robert B. Easter was elected as the new chairman.

Two meetings of the Advisory Council were held during the past fiscal year. The first meeting, on October 25, 1968 was devoted to a review and discussion of present and future project activities with their respective project directors, and the appointment of two (2) Ad-Hoc Committees. The first Ad-Hoc Committee was appointed to assist the Director in the preparation of a request for legislative support. The second was for the purpose of preparing guidelines within which the institutions would operate for in providing consulting services under the MTS program. Mr. George H. Jones, Western Program Director of the OSTS, attended the meeting and discussed various aspects of federal funding and policies of State Technical Services.

The second, an emergency meeting of the Council, was called on June 6, 1969. It's purpose was to re-evaluate the program elements in view of the decision of the Department of Commerce not to back a 1970 appropriation. Certain programs were suspended, funds reallocated, and terminal dates on certain projects extended to carry the program during this difficult period.

The Advisory Council is comprised of the following members as of June 30, 1969:

Robert B. Easter, Chairman
Toole & Easter
Missoula, Montana 59801

Clyde Cromwell
820 2nd Avenue
Laurel, Montana 59044

Clay Fanslow, Sales Manager
Glue-Laminated Beam Department
Anaconda Forest Products
Bonner, Montana 59823

George Hammond, Executive Director
State, County & Municipal
Employees Union
121 Burlington
Missoula, Montana 59801

Albert T. Kersich
Hurlbert & Kersich Consulting Firm
937 Grand Avenue
Billings, Montana 59102

Stanley Lane, Plant Manager
American Smelting and Refining
East Helena, Montana 59635

Paul Matteucci, President
Super Save Food & Drugs
P.O. Box 2007
Great Falls, Montana 59401

John Morrison, Sr., President
Morrison-Maierle, Inc.
Helena, Montana 59601

James O'Connell
Capri, Inc.
P.O. Box 1194
Helena, Montana 59601

Edward Shea
3150 Meade Avenue
Butte, Montana 59701

Richard Timmerman
Vice President
1st National Bank & Trust Co.
Helena, Montana 59601

Lee Walker, President
Northern Testing Laboratory
P.O. Box 1561
Great Falls, Montana 59401

FUTURE PLANS

Despite the successful completion of its fourth year of operation, the future of MTS seems rather hazy. If federal assistance is reinstated and the program gains solid support from the Department of Commerce, future plans will strive for the development of regional planning and more balanced programs within the state.

The regional council has been extremely active in generating programs which transcend state boundaries and also in appraising the informational needs of local businessmen. Efforts are now underway to develop regional programs such as a REGIONAL INFORMATION NETWORK whose implementation will have a direct impact on the future activities within Montana.

Plans also include broader industry representation and development of inter-related programs designed to give added impetus to the economic growth of the entire state through effective use of modern technology. The aim of MTS is to develop a meaningful dialogue between the field activities and the other program elements, so that the experiences gained through each would complement the other, thereby adding to the overall effectiveness of the entire program.

In addition, promotional activities will be undertaken in an effort to make businesses and industries realize the value of the program and its contribution to the economy of the state. Plans are also underway to explain the economic

benefits of the program to legislators and government officials in order to obtain a state appropriation. It is felt, that if the government officials understood the significance of the program, problems in obtaining appropriations will be minimized.

CONCLUSIONS AND RECOMMENDATIONS

The Montana Technical Services is a unique experience, not only for the administrators but also for the small businesses and industries striving to make up for lost time in the area of technology. Though positive gains toward closing the technological gap have been made during the past four years, problems still loom large and offering meaningful assistance is more complex than it appears at first glance. The programs may demand more work than orignially planned, the benefits may be impossible to quantify and the initial results may fall far below expectations. However, if this gap is ever to be bridged, concerted efforts must be continually directed toward this end with a program founded on a long-term basis. Also, program directors and participating institutions are hesitant to accept responsibilities for running a program whose future is in doubt. Therefore, it is strongly recommended that the STS Act be extended and the program put on a solid financial foundation.

Although the extant concepts of small business are varied and many, the fact remains that in a growing and expanding economy small enterprises should be continually brought into existence and should be aided in attaining maturity through efficient application of management techniques. It should also be noted that in the area of management science the

strides taken by technology effectively widen the gap and lessen the ability of the small businesses to compete. MTS, therefore, feels that management assistance should not be completely abandoned for technical assistance and that the STS Act should include a small (25-30) percentage of projects dealing with business management.

It is also the conviction of MTS that certain federal programs dealing in technology transfer should be consolidated. Plans and procedures should be formulated to coordinate the activities of NASA, AEC, DOD, and other federal agencies so that the fruits of research can be more effeciently disseminated.

The basis on which federal funds are allocated is another area of concern for MTS. Granting funds on a population basis restricts the program activities of a state such as Montana which is sparsely populated and somewhat underdeveloped. Therefore, for those underdeveloped states to properly compete in the highly competitive markets of this nation, a new policy for fund allocation should be formulated.

MTS also strongly supports the present centralized organization of the STS and recommends that the already established regions be strengthend. It is our belief that the existing geographical boundaries represent commonality of interests, resources, and economic problems and therefore should be further promoted for effecient utilization of technology throughout the area.

Though MTS appreciates the need and the value of the cost/benefit ratio, quantifying certain specific benefits is an extremely difficult task. It should be noted that progress, sometimes gradual and unmeasurable, also requires changes in the underlying social and educational structures of a developing economy such as Montana. Furthermore, it is not sufficient to simply pass along new knowledge; rather the user must be properly educated to effectively utilize and apply such new knowledge. Perhaps the need for such quantitative data may be better fulfilled if the OSTS developed standard evaluation criteria and techniques so that accrued benefits may be easily translated into cost/benefit ratios. At this point it should be pointed out that a continuing program of evaluation will demand additional staff at the administrative level.

EXHIBITS

STATE OF MONTANA

Montana Technical Services
Bureau of Business and Economic Research

EXHIBIT A: Report of Planning Grant Costs Incurred During Fiscal Year 1969
(July 1, 1968 to June 30, 1969)

Fiscal Year Grant	Grant Number	Total Grant Amount	Fiscal 1969 Costs	Balance as of July 1, 1969	Estimated Completion Date of Activities
1966	31-66	$25,000	$ 0.00	$ 0.00	Completed
1967	33-67	15,000	0.00	0.00	Completed
1968	11-25	20,000	9,769	2,241	December 30, 1969
Totals		$60,000	$9,769	$2,241	

STATE OF MONTANA

Montana Technical Services
Bureau of Business and Economic Research

EXHIBIT B: Summary of Matching Grant Expenditures

Program Category	Total Approved Budget	Total Costs to 7/1/69	Federal Funds Budgeted	Fed. Funds Expended FY 1969	Balance Federal Funds
GRANT FOR FISCAL YEAR 1969:					
Program Administration	$ 12,458.00	$ 0.00	$ 6,694.00	$ 0.00	$ 6,694.00
Educational Services	46,004.00	13,269.08	21,225.00	6,160.33	15,064.67
Information Services	5,000.00	2,133.86	2,481.00	1,360.61	1,120.39
Field Services	55,723.00	17,355.42	24,340.00	9,031.38	15,308.62
Totals	$119,185.00	$32,758.36	$54,740.00	$16,552.32	$38,187.68
GRANT FOR FISCAL YEAR 1968:					
Program Administration	$ 9,408.00	$ 0.00	$ 3,631.00	$ 0.00	$ 3,631.00
Educational Services	42,490.00	37,739.10	18,513.00	6,831.78	3,464.53
Information Services	13,036.00	13,253.44	6,518.00	1,146.84	0.00
Field Services	44,011.00	41,264.52	22,285.00	11,135.96	2,293.44
Totals	$108.945.00	$92,257.06	$50,947.00	$19,164.58	$ 9,388.97
GRANT FOR FISCAL YEAR 1967:					
Information Services	$ 47,443.00	$26,924.56	$18,904.00	$ 0.00	$ 6,747.00

STATE OF MONTANA

Montana Technical Services
Bureau of Business and Economic Research

EXHIBIT C: Matching Grant Expenditures by Projects

Project Title or Identification	Total Approved Budget	Total Costs to 7/1/69	Federal Funds Budgeted	Fed. Funds Expended FY 1969	Balance Federal Funds
GRANT FOR FISCAL YEAR 1969:					
Participating Institution: University of Montana, Missoula					
F9MC1-Timber Ind Field Service	$28,681.00	$12,829.54	$14,340.00	$ 6,396.00	$ 7,944.00
F9MC2-Mgmt Tech Seminar	9,882.00	664.26	4,918.00	330.26	4,587.74
F9MA-Administrative Expenses	12,458.00	0.00	6,694.00	0.00	6,694.00
Participating Institution: Montana State University, Bozeman					
F9SC1-CE & EM Seminars	5,656.00	3,897.79	2,828.00	1,601.29	1,226.71
F9SC2-Water & Waste Treat Wkshp	7,143.00	0.00	2,670.00	0.00	2,670.00
F9SN1-Sci & Engr Computer Appl	8,814.00	8,707.03	4,407.00	4,228.78	178.22
F9SN2-Roads & Streets Conf	8,736.00	0.00	3,518.00	0.00	3,518.00
F9SC4-Eng Res & Dev Report	5,000.00	2,133.86	2,481.00	1,360.61	1,120.39
Participating Institution: Montana College of Mineral Science & Technology, Butte					
F9TC1-Mining & Geol Field Serv	27,042.00	4,525.88	10,000.00	2,635.38	7,364.62
F9TC2-Mining & Fuel Methods Sem	5,773.00	0.00	2,884.00	0.00	2,884.00

EXHIBIT C: Matching Grant Expenditures by Projects (Cont.)

Project Title or Identification	Total Approved Budget	Total Costs to 7/1/69	Federal Funds Budgeted	Fed. Funds Expended FY 1969	Balance Federal Funds
GRANT FOR FISCAL YEAR 1968:					
Participating Institution: University of Montana, Missoula					
F8MN1-Wood Waste Disp Wkshp	$ 3,899.00	$ 0.00	$ 1,578.00	$ 0.00	$ 1,578.00
F8MN2-Computer Technology Sem	12,767.00	12,766.92	4,389.00	899.31	0.00
F8MN3-Forest Ecology Workshop	3,138.00	2,963.51	1,213.00	1,213.00	0.00
F8MA-Administrative Expenses	9,408.00	0.00	3,631.00	0.00	3,631.00
Participating Institution: Montana State University, Bozeman					
F8SC3-Water & Waste Treat Wkshp	6,318.00	6,684.20	3,159.00	3,159.00	0.00
F8SC2-Engr Res & Dev Report	13,036.00	13,253.44	6,518.00	1,146.84	0.00
F8SC5-Technical Service Group	18,166.00	15,699.52	9,625.00	3,999.41	2,293.44
Participating Institution: Montana College of Mineral Science & Technology, Butte					
F8TC1-Mining & Geol Field Serv	25,845.00	25,565.00	12,660.00	7,136.55	0.00
Participating Institution: Eastern Montana College, Billings					
F8MN5-Feed-Lot Operators Wkshp	7,012.00	3,410.47	3,497.00	1,610.47	1,886.53
GRANT FOR FISCAL YEAR 1967:					
Participating Institution: University of Montana, Missoula					
F7MN4-Technical Info Inventory	13,526.00	0.00	6,747.00	0.00	6,747.00

STATE OF MONTANA

Montana Technical Services
Bureau of Business and Economic Research

EXHIBIT D: Non-Federal Matching Funds Applied During Fiscal Year 1969

	Fiscal Year Grant Applied To		
	1967	1968	1969
Contributed Services, Facilities	$0.00	$20,464.83	$16,054.04
User Fees	0.00	1,515.00	152.00
Totals Applied During Fiscal Year 1969	$0.00	$21,979.83	$16,206.04

EXAMPLES OF SPECIFIC BENEFITS TO USERS

EXAMPLES OF SPECIFIC BENEFITS TO USERS

While reports from business and industry augment the enthusiasm and effectiveness of Montana Technical Services, specific benefits are only partially documented. This is not because the programs failed to transfer technology, rather, tangible results are either indeterminable or cannot be evaluated at the present time.

The following examples represent a sample of tangible results accrued through the efforts of MTS:

Field Service Activities

1. The company in the field of manufacturing lumber products needed information for effective utilization of wood waste, especially shavings. Through research of current material, the field agent suggested the use of shavings in the manufacture of particle board. In addition, he provided the firm with: (1) 25 samples of particle board from the University Lab; (2) information on the Bison System; (3) techniques for evaluating market potential, developing cost estimates, etc.; and (4) names of consultants.

   PROBABLE RETURN: Following the field agent's recommendations, the company has employed a consultant and initiated a study to establish the plant. The company is expected to have a capital outlay amounting to over $3,000,000 and employ about 50 people.

2. Because of the following problems, a small manufacturing firm was on the verge of bankruptcy: (1) poor production methods; (2) bottlenecks in production; (3) lack of quality control; (4) poor internal management; and (5) poor accounting and cost analysis. The field agent offered the firm current techniques for quality control and assisted in establishing a cost analysis program. In addition, the management was referred to a competent consultant who provided them with improved operational methods.
ACCOMPLISHED RETURN: The field service helped save the company from bankruptcy. The company now expects to save about $10,000 this year.
POSSIBLE RETURN: $40,000 annually

3. A lumbermill was experiencing winter shut-downs of their plant due to difficulty in sawing frozen logs. The firm requested the assistance of the field agent who introduced a new technique in sawtooth gullet design for band saws. With the new gullet design the company was able to maintain an operating capacity equivalent to that of summer months.
POSSIBLE RETURN: $500,000 annually: jobs saved, 200

4. Because of unsophisticated logging practices, poor management, and lack of quality control, a logging company was considering a shut-down. MTS, in response to the request for assistance, reviewed the operations and provided the management with data on modern logging and management techniques. The management evaluated its position and decided against the shut-down of its operations.

   ACCOMPLISHED RETURN: $20,000 annually; jobs saved: 20

5. A lumber manufacturer had considerable difficulty in lowering costs and upgrading quality in the manufacture of wood moldings. The MTS agent reviewed past efforts, discussed the properties of thin saws, and suggested methods to measure thin saw properties and performances. The company has tooled up for testing and initiating the thin saw method.

   PROBABLE RETURN: $40,000 annually; new jobs: 50

6. A firm was attempting to expand its operation in the manufacture of plywood and needed technical information to implement their decision. The company management appraised their position in light of counseling offered by the field agent and decided against manufacturing plywood.

   ACCOMPLISHED RETURN: Saving of $5,000 annually

7. A manufacturer of component parts for window frames was experiencing bottlenecks at two separate production centers. The field agent reviewed production line activities, made available modern techniques of manufacturing the product and suggested a method to automate certain functions performed at two separate centers. Based on information received from the agent, the plant engineer designed a new plant layout and the automation of the plant is underway.
   PROBABLE RETURN: $2,000 annually
   POSSIBLE RETURN: $2,000 annually

8. A sawmill was interested in increasing its efficiency in production by converting its sawmills to thinner saw kerfs. Research data on modern operation of thinner saw kerfs was furnished the management. The management is in the process of implementing new techniques to reduce saw kerfs in sawmill operation.
   PROBABLE RETURN: $35,000 annually
   POSSIBLE RETURN: $35,000 annually; new jobs: 200
   It should be pointed out that in Montana sawmills are producing in excess of one billion board feet of lumber. By making a change to thinner saw kerfs, a possible annual savings of ONE MILLION DOLLARS could be realized by the sawmill operators in Montana. Efforts are being undertaken to bring this new technology to all Montana sawmills.

9. A mining operator requested information concerning geochemical techniques for underground lead mining. The operator was offered pertinent information relating to the effective use of modern geochemical techniques in the analysis of surface and underground samples. Based on the expertise received from the field agent, the operator sunk an 80-foot winze to find a commercial grade lead vein thus establishing a new source for mining lead. Without the help of the field service this new source would not have been exploited.

   ACCOMPLISHED RETURN: $21,000 savings to date

10. A small miner was faced with the problem of grade control in pit rock mining. The field agent aided the operator in the design of fluorescent tungsten standards for grade control of pit rock. This innovation helped improve the grade of ore trucked to the mill, and profits rose accordingly.

    ACCOMPLISHED RETURN: $2,500 annually

    Additional profits from improving the grade ore are considerable but cannot be estimated at this time.

11. A mining operator was experiencing considerable difficulty with arsenic concentrate. Current information on antimony ore concentration was secured and offered

the miner which enabled him to make a higher grade concentrate which was low in penalty-bearing arsenic.

ACCOMPLISHED RETURN: $8,000

Since this operator did not have the necessary educational background to utilize a library, he would have been forced to hire someone to do the research. The cost of this research would have been considerable and not easily afforded by the miner.

12. A concrete block manufacturer was loosing his portion of the market and needed information on improving his product. The field agent discussed the problem and offered pertinent information on pumicite and expandable shale occurances in Montana.

ACCOMPLISHED RETURN: $500.00

PROBABLE RETURN: The probable return is quite significant; the manufacturer gained his market and became competitive with other block manufacturers in the state.

13. A mining operation which could not afford a private consultant was in need of information on the making of a separate gold and bismuth concentrate from a complex gold bismuth ore. A successful method for making separate gold and bismuth concentrate was uncovered through library search and passed on to the operator.

ACCOMPLISHED RETURN: $500

PROBABLE RETURN: The operator is in the process of implementing this method and future returns should prove significant. However, it is felt that an accurate dollar value could not be estimated at this time.

14. A mining company was in dire need of information concerning caving problems. The field agent made a library search and presented the operator with copies of publications and excerpts on ground support methods. The mining operator utilized the research which resulted in less ground loss by caving when mining in heavy ground.

ACCOMPLISHED RETURN: $1,000

PROBABLE RETURN: Significant but cannot be estimated

15. A small mining operator encountered considerable difficulty in mining commercial ore from a vein. Through MTS's field service activities the operator was advised to sink on the best of several ore shoots along a vein of varying width and metal content. Successful implementation of this method enabled the operator to ship more tons of commercial ore.

ACCOMPLSIHED RETURN: $500

POSSIBLE RETURN: Significant, but cannot be estimated

16. A small manufacturer requested information on the manufacture of a flying saucer toy. Data on development work, labor requirements, manufacturing facilities, and sources of financing were provided to the management. The firm is formulating plans to proceed with the project.
ACCOMPLISHED RETURN: $1,500
POSSIBLE RETURN: Significant

17. Desiring expansion, a small plastics manufacturer requested information on additional use of the firm's products. Through the efforts of the MTS field agent, proper literature was referred to this firm and sources of financial help noted; also information on products which could be manufactured was provided. It is hoped that the firm will utilize the information, thus creating new jobs and adding to economic growth of the state.
ACCOMPLISHED RETURN: $500
POSSIBLE RETURN: Significant

18. A lumber company, interested in diversification requested information concerning low-cost, modular-type housing units. Current information on construction, costs and markets was gathered and presented to the management for their consideration.

ACCOMPLISHED RETURN: $1,000

POSSIBLE RETURN: Based on the future demand for the product and plans of the management, the firm should employ at least 20 persons.

19. Due to lack of inventory control and poor financial management, a honey wholesaler was experiencing considerable difficulties in the operation of his business. The field agent analyzed these problems and recommended various techniques for imporving the total operation. Information provided was used by the company to prepare an appeal to the Commodity Credit Corporation for inclusion of the facility under federal government loan provisions.

ACCOMPLISHED RETURN: $3,000

POSSIBLE RETURN: Although it is difficult to estimate a dollar value on the result of information provided, the firm benefited considerably and has plans to build new facilities and modern equipment.

20. Technical information on construction and design of plastic pipes was requested by a small manufacturer. The MTS field representative supplied pertinent references to the management.

ACCOMPLISHED RETURN: $500

POSSIBLE RETURN: Information obtained will aid the firm in securing financial assistance and increasing the overall capabilities, thus contributing to the economy of the state.

Educational Activities

1. The management seminar series made an important contribution to the technological development within the state by engendering an awareness of the increasing importance of computers in business. Aside from the intangible benefits, this program led to the revamping of a computer service bureau which in turn, led to an immediate computer application by three firms.
   ACCOMPLISHED RETURN: $48,000 annually

2. The only service bureau in the state specializing in engineering and scientific computer application went bankrupt after two years of operation. The early demise of this enterprise was not due to inefficient management or dearth of problems in engineering but due to inability on the part of engineers and scientists to effectively utilize the available computer expertise. Through a series of conferences and local assistance-type programs, technical information on computer applications, the availability of programmed materials, programming methods and advances in computer technology was disseminated to potential users. The educational impact of this program has been immense; long-range benefits include widespread use of computers by engineers and scientists, opening new markets for service bureaus and related businesses.
   ACCOMPLISHED RETURN: $169,000 annually

3. The dwindling reserves of uncommitted fresh water sources and the increasing pollution of our rivers have caused an alarm which demands immediate solution. The first line of defense for public health is the treatment plants already in operation. The five-day Water and Waste Treatment Workshop was directed toward operators who should possess the necessary skills and modern techniques to efficiently perform their duties, thus, aiding in the abatement of water pollution. The benefits received by the participants cannot be expressed in terms of dollars. However, it is felt that if all the treatment plants in the state were efficiently operated and utilizing modern technology, they would reduce the state's pollution by at least 20 percent and delay the necessity of advanced treatment by at least a decade. Furthermore, as the operation of a treatment plant has more influence upon the results than the plant design, it is clear that one of the most significant activities in the war on pollution should be directed towards operators and their training.

STATE OF MONTANA

Montana Technical Services
Bureau of Business and Economic Research

Specific Benefits Summary

Technical Service Category	Total Federal Expenditures	Capital Investment or Savings	Annual Return or Savings	Jobs: New or Saved
FIELD SERVICE				
Accomplished (Implemented)	$20,167.34*	$ 36,000	$ 32,500	20
Probable (In Process)	--	3,005,500	77,000	50
Possible (In Future)	--	100,000	637,000	670
Totals	$20,167.34	$3,113,500	$746,500	740

*Total federal funds expended during F.Y. 1969.

EDUCATIONAL PROGRAMS				
Accomplished (Implemented)	$ 8,617.78*	--	$217,000	--
Probable (In Process)	--	--	--	--
Possible (In Future)	8,617.78	--	217,000	--
Totals	$17,235.56	--	$434,000	--

*Total federal funds expended on the projects

PROGRAM CRITIQUES

PROGRAM CRITIQUES

Water and Waste Water Treatment Workshop

F 8 SC 4

Sponsored By: The Department of Civil Engineering & Engineering Mechanics, Montana State University, in cooperation with the State Department of Health

Director: Dr. R.L. Sanks; Dr. E.R. Dodge

Location: Bozeman, Montana

Scheduling and Status: November 18-22, 1968; completed

Program Category: Educational

User-Rate Data: Persons 60; firms 45

Description and Objectives: Generally, water treatment and sewage plants in Montana are operated by personnel with little or no formal education in the field. The purpose of this workshop was to acquaint the operators with the complexity of treatment procedures and to impart modern knowledge and techniques for adequate operation and management of water and waste treatment plants. The five-day workshop discussed many pertinent topics including hydrology, water quality, public health, particle separation, sludge handling and filtration.

Evaluation and Remarks: The five-day workshop proved much more effective than the one held in the last fiscal year. The continued growth in attendance (76 in Fiscal Year 1968 to 115 in Fiscal Year 1969) and the enthusiasm of the participants indicate the value of this program. One hundred percent of the participants felt that the workshop was worthwhile and topic presentations excellent. The workshop also attracted participants from neighboring states, who were impressed with the efficacious quality of the program and volunteered to attend in the future. Since efficient operation of a treatment plant is more influential in curbing water pollution, it is hoped that this program will significantly contribute to the abatement of water pollution in the state.

Scientific & Engineering Computer Applications

F 8 SN 1

Sponsored By: The Department of Civil Engineering & Engineering Mechanics, Montana State University

Directors: Donald Reichmuth; Dr. Glen L. Martin

Location: Bozeman, Montana

Scheduling and Status: Throughout the Academic Year 1968-1969: continuing

Program Category: Educational

User-Rate Data: Persons 21; firms 14

Description and Objectives: The objectives of the conference were to familiarize the participants with the capabilities of the computer in solving engineering problems, to point out where computers can be effectively used by practicing engineers, and to provide instructions and assistance in programming problems for computer solutions. The program included a number of sessions and demonstrations with group meetings providing participants the necessary data on programming and problem solving.

Evaluation and Remarks: A critical evaluation of this program indicates that the information provided by this project enabled the firms to better assess the economic and technological benefits which their firms could derive from using computer services. Because of this program, the potential users are in a better position to understand the significance of remote terminal operation and will utilize it for efficient operation of their business.... Project directors feel that specific programs should be developed to fulfill a firm's individual need, thus keeping them interested and abreast of rapidly changing technology. Also, the concept of setting a multi-connection to different commercial systems via the remote terminal seems to have great potential. If this

type of operation is coupled with certain BATCH mode processing, small firms throughout Montana would be able to develop computer services to serve their own best interests. This would be a giant step towards the realization of the long-range goals enumerated by Montana Technical Services.

Civil Engineering and Engineering Mechanics Seminar

F 9 SC 1

Sponsored By: The Department of Civil Engineering and Engineering Mechanics, Montana State University

Directors: Mr. R.C. Smith; Dr. F.F. Videon

Location: Bozeman, Montana

Scheduling and Status: 1968-1969 academic year; continuing

Program category: Educational

User-Rate Data: Persons 300; firms 20

Description and Objectives: The purpose of the seminar series was to aid practicing engineers in keeping abreast of new techniques and processes for solving problems in the areas of structures, hydraulics, transportation, earthwork and foundations. Some of the topics discussed at the seminar were: (a) pressure sewerage systems and problems; (b) coordinated formulations in mobile bed hydraulics; (c) regime outlook on practical river problems; (d) the use of computers in transportation engineering; (e) insturmentation and data processing for structural testing; (f) concepts in design of earth embankments; and (g) building foundations--design concepts.

Evaluation and Remarks: The seminars presented new and controversial topics which provided a challenge to the scientists and engineers. All participants agreed that the program was interesting, informative and worthwhile. To enhance the objectives of the seminar series and to reach engineers in the remote areas of the state, the Advisory Council suggested the use of video tapes. The topic of Integrated Civil Engineering Systems was taped and plans are underway to exhibit the tape in two cities. Devleoping a successful program for disseminating engineering technology through seminars is definitely within the long-range goals of the Five-Year Plan. This program will receive priority as long as it exhibits the efficacious quality and success of the last fiscal years.

Research and Development Newsletter

F 8 SC 2; F 9 SC 4

Sponsored By: Engineering Research Laboratories, Montana State University

Director: Mr. Herold Murdock

Location: Bozeman, Montana

Scheduling and Status: In its fourth year; continuing

Program Category: Informational

User-Rate Data: Persons 3,000; firms 700

Description and Objectives: The purpose is to publish lists and descriptions of new research and development projects and to disseminate information relating to new products and processes developed in the laboratories with particular emphasis on industrial applications. Three thousand copies of the Newsletter are being published and distributed bimonthly.

Evaluation and Remarks: The quality of this publication has attracted many Montana businessmen who have requested that their names be placed on the mailing list. Based upon the interest exhibited by businessmen (an increase in the publication's circulation from 1,500 to 3,000 copies) it can be concluded that the Newsletter has stimulated the interest of business and industry in the technology available at the state's educational institutions.

Technical Services Group

F 8 SC 5

Sponsored By: Center for industrial Development & Management Services; Department of Industrial & Management Engineering, Montana State University

Director: Mr. Russell E. Estes

Location: Bozeman, Montana

Scheduling and Status: In its third year; continuing

Program Category: Field Service

User-Rate Data: Firms 32

Description and Objectives: This field service makes itself available to any manufacturing firm in Montana requiring technical expertise. The type of assistance provided includes: (a) recommending new means of cutting manufacturing costs and improving efficiency; (b) pointing out development of new products and processes that could be adapted in their respective operations; and (c) advising in plant layout, introduction of new equipment and techniques to improve and expand operations.

Evaluation and Remarks: Initially, this field service program was directed toward the chemical processing industry; but, with the phasing out of the Industrial Development Center, remaining funds were channeled into a field service program for all manufacturing concerns. Although the new field service is still in the embryonic stage, a number of groups including development corporations, Chambers of Commerce, and manufacturing firms have contacted the Center. However, after a critical evaluation, the Advisory Council has suspended its Fiscal Year 1969 activities with the recommendation that the project be realigned to better serve the operational needs of the manufacturing industries.

Timber Industry Field Service

F 9 MC 1

Sponsored By: School of Forestry, University of Montana

Director: Mr. Leo Cummins

Location: Missoula, Montana

Scheduling and Status: Throughout the fiscal year; continuing

Program Category: Field Service

User-Rate Data: firms 30

Description and Objectives: Because the small lumber mills and independent loggers are unable to afford the expertise needed to solve their production problems, this new field service was implemented to: (a) offer on-the-spot counseling; (b) encourage utilization of modern technology; (c) supply them with related technical information that could be readily put to use; and (d) make available a referral service when problems become complex.

Evaluation and Remarks: Initiated Fiscal 1969, this new field service has made a significant impact on the forest products industry in Montana. Manufacturers and businesses in the field were contacted to explain this program and establish a rapport which is so important to effective technology transfer. Articles on modern techniques on costing and modern production techniques were also published in a quarterly newsletter, Forest Industry Newsletter. Over 2,500 copies of the issue were distributed to the industry and the demand for the publication is at a sharp incline. Although the program is in embryonic stages, it has isolated a problem area through evaluation of "call reports." An educational program, "Workshop on Wood Wastes" scheduled for fall of 1969, is a direct result of this field service activity. A majority of firms in the forest products industry are small, inefficient and cannot afford engineering and scientific expertise necessary for efficiency and profitability.

Hopefully, the field service program will aid in increasing timber production and improving logging and timber processing operations over the balance of time covered by the Five-Year Plan.

Management Technology Seminars

F 9 MC 2

Sponsored By: Bureau of Business and Economic Research, University of Montana

Director: Rauf A. Khan

Location: Missoula, Montana

Scheduling and Status: First of the series was held on June 4, 1969; continuing

Program Category: Educational

User-Rate Data: persons 11; firms 10

Description and Objectives: The first workshop in this series was organized to provide much needed technical information and guidance concerning management problems facing the service station managers and operators. Throughout the one-day workshop experts discussed the use of analytical management techniques in various areas of business including inventory control, payroll, accounting, and employee management. In all sessions only the practical applications of management techniques were emphasized.

Evaluation and Remarks: Since the rate of business failures among service stations is considerably high, it was felt that available expertise should be directed towards the managers and the operators so that they may successfully operate their business thus contributing to the overall economy of the state. The program was a highly successful one and resulted in upgrading the attendees' understanding of management techniques. Participants said that they have understood the basic concepts of management and that they would immediately apply them in their operations. Hopefully this project will serve as a basis for a field service program for retail trade and service industries, thus broadening industry representation and meeting one of the goals of the Five-Year Plan.

Forest Ecology Workshop

F 8 MN 3

Sponsored By: School of Forestry, University of Montana

Director: Dr. Lee E. Eddleman

Location: Lubrecht Experimental Forest, Missoula, Montana

Scheduling and Status: June 11-13, 1969; completed

Program Category: Educational

User-Rate Data: firms 11; persons 11

Description and Objectives: The Forest Ecology Workshop was designed to explain the use of forest ecology in land-use planning. The three-day program emphasized the significance of indicator plants as tools for measuring the forest environment. Topical lectures augmented by field trips included: (a) plant identification and adaption; (b) soil-plant relationships; (c) ecology of western Montana forest types; and (d) use of indicator species for determining site potential.

Evaluation and Remarks: The participants' responses to the questionnaires indicate that the program achieved the objective of disseminating current knowledge in this area of forestry. This was the first time that information in this important field of ecology was made available to the forest industry in this area. Although no direct benefits can be directly traced to the material presented at the workshop, requests for continuation of the program support the conclusion that the program should be continued. Additionally, since the nation as well as the state are deeply concerned with pollution and ecology, educational programs in this area will continue to receive priority as they relate to field service activities.

Mining and Geology Field Service

F 8 TC 1; F 9 TC 1

Sponsored By: Bureau of Mines and Geology, Montana College of Mineral Science and Technology

Director: Mr. Willis Johns

Location: Statewide

Scheduling and Status: In its fourth year; continuing

Program Category: Field Service

User-Rate Data: firms 80

Description and Objectives: The purpose of this program is to disseminate information concerning new innovations in machinery, equipment, and methods of mining to those who can make effective use of this service. The field agents visit active mines and discuss geological, mining, and engineering issues in an attempt to solve specific problems confronting the operators.

Evaluation and Remarks: Because of its efficacious nature, the mining visitation program has made a great impact on the mining industry in Montana. A large number of requests for information and guidance are being received. Several techniques that have been pursued in individual cases may have industry-wide applications. Examples of these are geochemical wall rock studies and information on feasibility and design of portable milling facilities. Work on case studies has also been initiated in an attempt to isolate problems confronting any one phase of the mining industry. "Geochemical Prospecting Seminar" and "Directory of Mining Enterprises for 1968" although funded by the Bureau of Mines, were direct results of this field service. This program, in the opinion of the designated agency, is one of Montana's most successful. The field agents are capable, the administration effective, and the rapport with industry excellent.

COMMENDATIONS

COMMENDATIONS

Since its inception, the Montana Technical Services program has received commendations on the exceptional quality of services afforded by field service programs, seminars, workshops and conferences. Following are a few excerpts from Fiscal 1969 files:

Educational Activities:

"...The knowledge of the understory plants and their significance is needed to completely make management decisions and the workshop really did a good job covering this need. Your time and efforts have been sincerely appreciated."

"...Your workshop was excellent...I would also like to see a program that would go into the alternatives of forest species selection for management."

"...Your workshop developed an awareness of plant associations and consequently these concepts will enter into future management decisions concerning reforestration; harvesting."

"...The information I received at the Water School is of great help in the job I am doing...especially that of electrical pump operation and the class discussions of problems..."

"...I would like to express my appreciation to the program directors of Water and Waste Treatment Workshop...I am going to investigate an idea for preserving cast iron water mains that were discussed...This could save us the cost of replacing the main...I hope that we can perpetrate the constant improvement in the future."

"...The Water School enabled me to...successfully pass the certification tests...also after attending the session on anarobic digestion, I have been able to implement some of the ideas learned from the talk..."

"...Since I am a bookkeeper I was more interested in the accounting and credit and collections...I found the workshop on Service Stations very enlightening."

"...I think the program was well worth my time. It made me realize the importance of my job and the different topics discussed...It was more than I expected."

Field Service Activities:

"...They (field agents) both went underground with us and defined the formations we had cut through. They then came out and looked over two other old workings almost on the same leads we were working on. I had my own theories but after studying the topography and the geology of this certain terrain, Ken and the student sat down and pointed out to me things I had never taken into consideration. This saved me considerable work and money."

"...Ken Bondurant made several visits here and was very helpful considering the limited time he had to spend. I think the Mine Visitation Program is good for the mining industry and would like to see it continued and even expanded so the man could spend a little more time at each property. The only fault I could find was that visits were too short and usually came without advanced notice, leaving very little time to accomplish much. But, all things considered, they are very helpful and I would like to see the program continued."

"...Mr. Bondurant was very helpful. He gave every bit of his time and attention that could be desired, and answered all requests that I desired. These visitations are very good. They not only are very practical but also have a morale boosting effect. So many regulations seem to be created for the purpose of slowing down or preventing new business from getting started. This program seems to be planned for a good purpose."

"...I was well pleased with the help given by Mr. Bondurant. He pointed out many helpful things as well as making a preliminary analysis on one claim. The Mine Visitation Program is most certainly helpful and more small mine operators should take advantage of it."

"...His (field agent) visit with us was very interesting and laid the groundwork for future conferences on the entire wood products field as it affects Missoula's economy. He gave us some useful specific information, but most of our time together was spent on the broad problem involved in the wood products industries and their probable future as related to the local economy. We intend to have future visits with Leo from time to time in order for us to be kept as nearly up-to-date as possible on present conditions and probable new developments."

"...He was particularly helpful in connection with problems we are having in our Moulding Department and his conversation and information in his Newsletter led us to information on thin kerf saws which we believe will be beneficial in that area. He has also met with our forest and logging people but has not yet had an opporutnity to visit those operations. I am not now in the position to evaluate the cost benefit ratio of this program, but as a member of the timber industry,

I am pleased to have someone knowledgeable in that field available to us and to University people. I am sure this will result in better cooperation."

"...As a Montana industry we are vitally interested in how our tax dollars are used. We are, therefore, very much pleased with the services and assistance we are able to get through Mr. Cummins. Mr. Cummins offered suggestions and advice to us with respect to a new 'cut stock' department which we are planning, and has been helpful in material handling, process control and lighting. In addition, when we needed information on finger-jointing and specific data on drying, machining and manufacturing for different species of wood, with which we were not familiar, he was quick to respond. Mr. Cummins was also instrumental in giving us a fresh approach on a problem which had been plaguing us for years, i.e., tying a sticker and franker together. We intend to use Mr. Cummins' services wherever and whenever possible, and feel that the services provided through your department are good for the industry and would like to see it continued."

"...I have visited with Leo on several occasions about the timber industry program, and the ways in which he might be of assistance. It seems very desirable to us that some sort of communication be developed between the Forestry Department of the University and the logging and lumbering business. Much could be gained on both sides. Definitely, we are in favor of this field service program, and will do everything we can to give assistance to it."

"...Montana timber industries need a field service program. Such a program could provide needed technical assistance in solving problems, researching and developing new methods, and equipment at the production level. The value of such a program would further industry's objectives of (1) more efficient use of our natural resources, and (2) production of a better and more useful product."

"...Mr. Leo Cummins, your field representative, is currently working on one of our problems concerning chip degradation in the chipping or manufacturing process. The magnitude of this problem is of such a proportion that we work on it on a full-time basis. Leo is researching the mechanical aspects of the problem, and familiarizing himself with our operation. The assistance Leo is providing is a help to us. The fact should be recognized that most problems of this nature require systematic investigation and analysis, before remedial actions can be affected, all of which consume a great deal of time. I certainly hope you will continue the field service program. Mr. Cummins industrial experience, combined with his continuing interest in the forest industries, can be of considerable assistance to us..."

"...We had only one contact with your department and that was with Howard Huffman of Bozeman--when he came over and outlined the new program in our Industrial Relations Committee. The program was very informative and clearly outlined how we could obtain necessary assistance."

"...(1) While I am certain that Mr. Hodgkin is conscientious and honest in his report, I am not certain of his background experience in evaluating socio-economic problems facing Lewistown and Montana in general. (2) His report is really a restatement of problems related by my office and that are generally known. (3) There are no constructive avenues suggested or recommended to solve these problems. (4) While Lewistown may be pointed out in various studies and reports as being a unique and remarkable community, it seems to have taken the lead among communities throughout the state in trying to assess its problems and to do something about them, we still face the facts of economic life. (5) I would like to ask you to furnish my office the purpose of this particular study and does it really relate?"

"...I am happy to relate to you the assistance and cooperation this office has received by the Center for Industrial Development and Management at Montana State University in Bozeman. As a result of services provided and personal contact with Dr. William Lassey, Department of Sociology at MSU, I was placed in touch with Mr. Huffman of that school. Our discussion centered primarily around a proposal that we are making in our Model City program in relation to business development in Helena and more specifically, the services of professional consultants that may be provided to local businessmen. Mr. Huffman related to me the operations of the Center for Industrial Development and the possibilities that he saw in our use of their facilities. The results of many discussions and phone calls...has resulted in a budget proposal by this agency, designed around consulting services for businesses. All details of this program have not been worked out at this point, but I would like to say that we have had excellent cooperation with the Univeristy at Bozeman, and look forward to working with them in our proposal for business development."

"..Mr. Huffman completed an investigation for us regarding prefabricated homes in five counties...The results were extremely valuable to us in determining the feasibility of operating a small prefabrication house-plant in Great Falls. We have been successful in selling several houses and establishing a small but new industry in Great Falls...we consider the service offered by the University extremely helpful in arriving at a decision of whether we should go into this type of business or not."

"...Several hours were spent by a representative from the Montana State University Center helping us to plan an area retail survey that the Bozeman Chamber of Commerce plans to conduct in the near future. We appreciated this assistance, and this guidance hurried the day we can make this survey a reality."

"...The object of the study was to determine the best location in Billings or the surrounding area for heavy industry. The information provided by Mr. Estes and other members of the center was quite good and helpful in making a determination."